|INCH-POUND|

MIL-C-17/183B
20 February 1991
SUPERSEDING
MIL-C-17/183A(EC)
10 August 1987

MILITARY SPECIFICATION SHEET

CABLE, RADIO FREQUENCY, FLEXIBLE, COAXIAL, 50 OHMS, M17/183-00001

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-C-17.

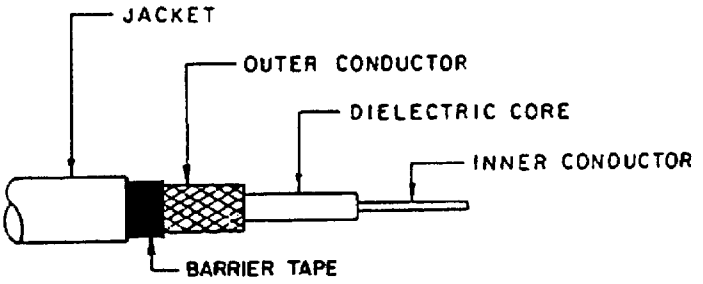


FIGURE 1. Configuration.

TABLE I. Description.

Components	Construction details	
Inner conductor	19 strands of tinned copper wire, each strand .0072 inch diameter. Overall diameter: .0355 inch ±.0020.	
Dielectric core	Type A-1: Solid polyethylene. Diameter: .116 inch ±.004.	
Outer conductor	Single braid of AWG No. 36, tinned copper wire. Diameter: .145 inch maximum.	
		Alternate
	Coverage: 92.8% nominal	94.2% nominal
	Carriers: 12	16
	Ends: 9	7
	Picks/inch: 7.7 ±10%	10.3 ±10%

TABLE I. Description - Continued.

Components	Construction details
Barrier tape	A .001 inch thick polyester tape faced with a .002 inch thick layer of aluminum. The tape will be applied with a 50% lap, aluminum face toward the outer conductor. Diameter: .155 inch maximum.
Jacket	Cross-linked polyolefin Diameter: .195 inch ±.004.

ENGINEERING INFORMATION:

Continuous working voltage: 1,400 V rms, maximum.

Operating frequency: 1 GHz, maximum.

Velocity of propagation: 65.9 percent, nominal.

Power ratings: See figure 2.

Operating temperature range: -30°C to +85°C.

Inner conductor properties:

DC resistance (maximum at +20°C): 1.480 ohms per 100 feet.

Elongation: 15 percent minimum.

Engineering notes: This cable is useful in general purpose low temperature applications. (See connector series "TNC", "BNC", and "SMA" in accordance with MIL-C-39012.) These cables were redesigned to meet the vertical flame test.

REQUIREMENTS:

Dimensions, configuration, and descriptions: See figure 1 and table I.

Environmental and mechanical:

Visual and mechanical examination: Applicable.

Out-of-roundness: Not applicable.

Eccentricity: 10 percent maximum.

Adhesion of conductors:

Inner conductor to core: 5 pounds, minimum; 15 pounds, maximum.

Aging stability: +98°C ±2°C.

Cold bend: -30°C ±2°C.

Dimensional stability: +85°C ±2°C.

Inner conductor from core: .062 inch, maximum.

Inner conductor from jacket: .125 inch, maximum.

Contamination: Not applicable.

Flame propagation: Applicable.

Acid gas generation: 2.0 percent, maximum.

Halogen content: 0.2 percent, maximum.

Immersion test:

Tensile strength, percent of unaged minimum: 50

Elongation, percent of unaged minimum: 50

Smoke index: 25 maximum.

Toxicity index: 5 maximum.

Durometer hardness: (Type A) 80 minimum.

Weathering: Applicable.

Abrasion resistance: 75 cycles minimum (jacket only).

Tear strength: 35 pounds per inch minimum.

Heat distortion: 30 percent maximum distortion.

Physical tests on unaged jacket:

Tensile strength: 1,300 psi, minimum.

Elongation, 160 percent, minimum.

Physical tests on aged jacket:

Air oven:

Tensile strength, percent minimum: 60

Elongation, percent minimum: 60

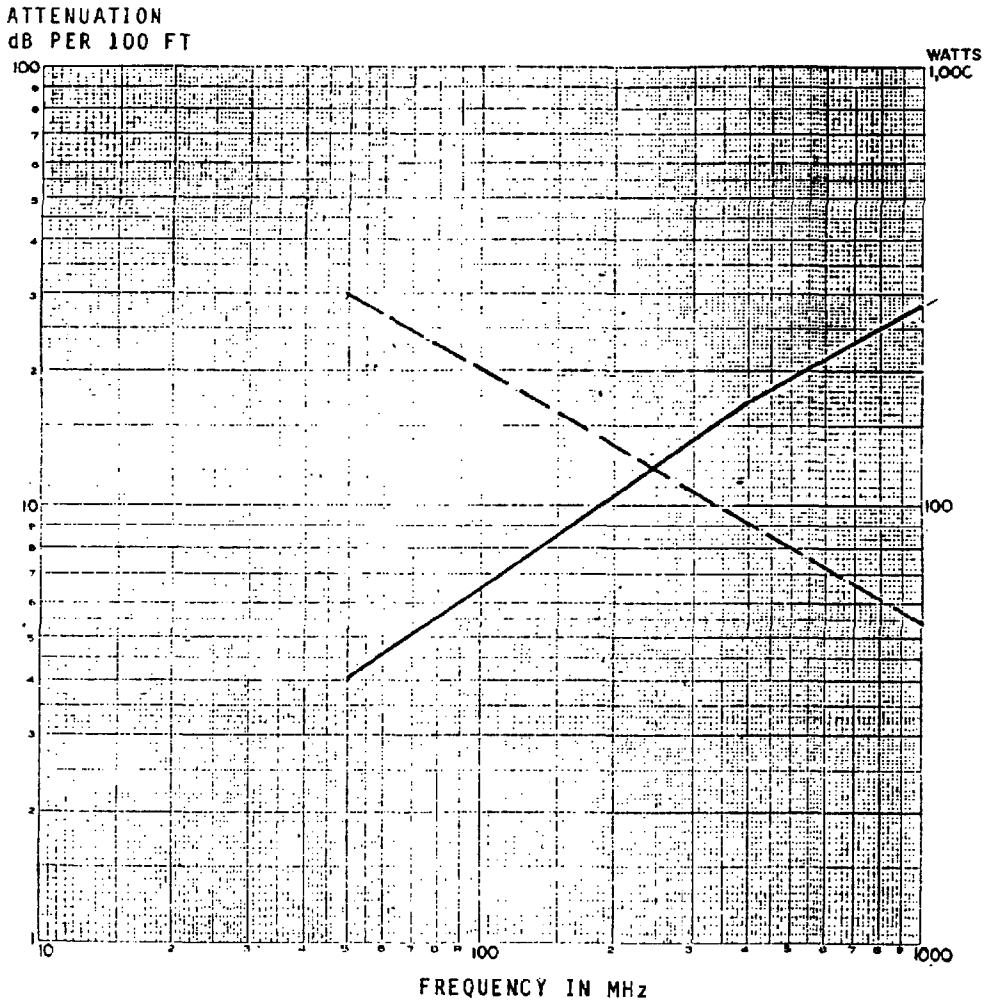
Hot oil immersion:

Tensile strength, percent minimum: 50

Elongation, percent minimum: 50

Tensile strength and elongation: 1,300 psi, 160 percent minimum.

Weight: 3.0 pounds per 100 feet maximum.



MAXIMUM POWER - - - - - AT 25°C SEA LEVEL

MAXIMUM ATTENUATION _____ Tabulated values are for reference only. The values on the chart represent the requirements.

FREQUENCY MHz	ATTENUATION dB	POWER WATTS
50	4.0	300
100	6.5	200
400	17.0	90
1000	28.0	33

FIGURE 2. Power rating at 25°C sea level.

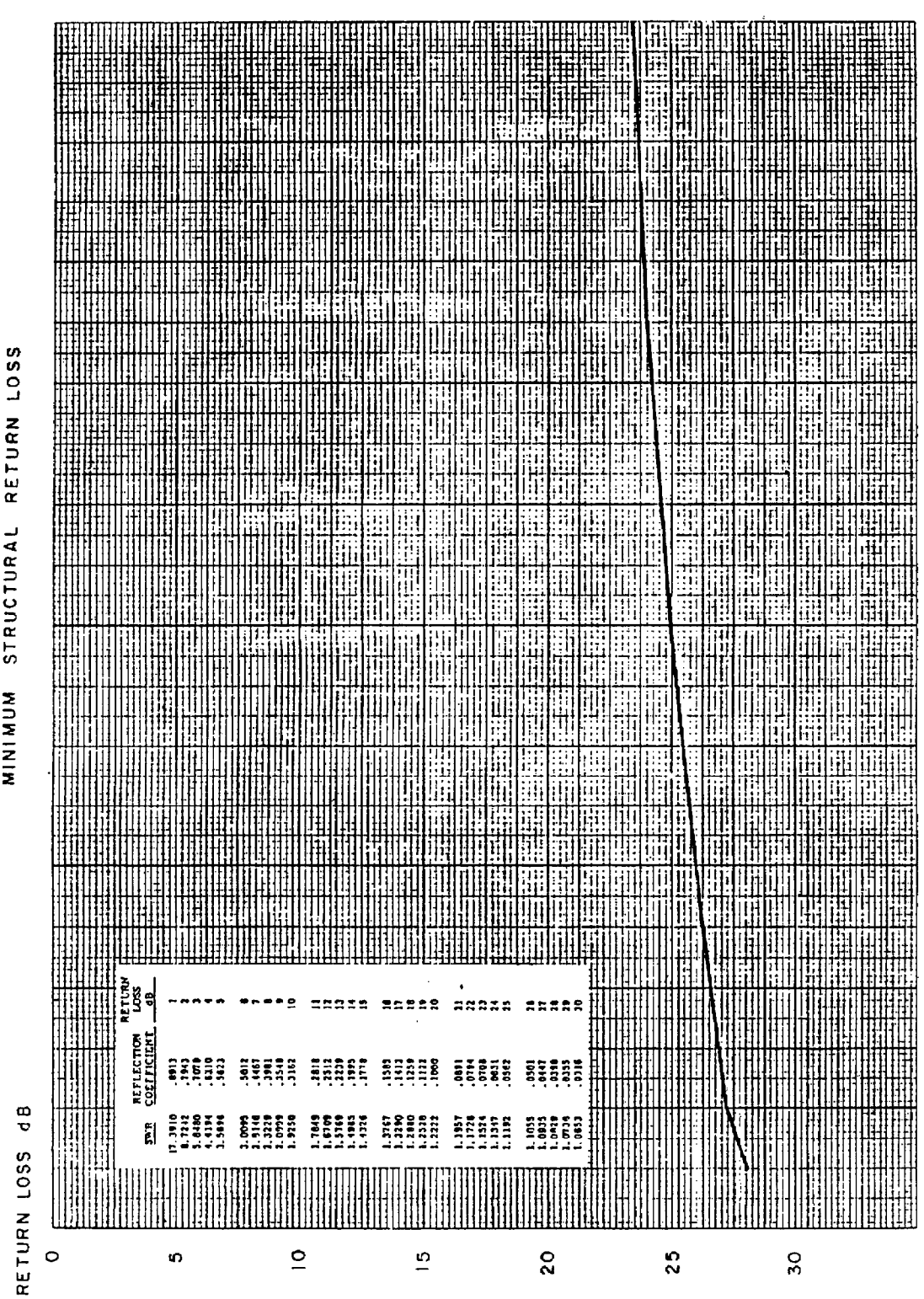


FIGURE 3. Structural return loss

Electrical:

Spark test: 5,000 V rms, minimum.

Voltage withstanding: 5,000 V rms, minimum.

Corona extinction voltage: 1,900 V rms minimum.

Characteristic impedance: 50 ±2 ohms.

Attenuation: See figure 2.

Structural return loss: See figure 3.

Capacitance: 32.2 pF per foot.

Part or Identifying Number (PIN): M17/183-00001.

NOTE: Revision letters are not used to denote changes due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 85

Review activities:
Army - AR, MI
Navy - SH
Air Force - 11, 80, 99
DLA - ES, IS

User activities:
Army - AT, ME
Navy - AS, MC, OS
Air Force - 19

Preparing activity:
Navy - EC

Agent:
DLA - ES

(Project 6145-1176-04)